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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,671	04/04/2001	Hiroaki Mashiko	N02-129931C/KK	1905

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EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s) <i>HC-8</i>	
	09/824,671		MASHIKO ET AL.	
	Examiner		Art Unit	
	Jason M. Greene		1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.
2. With regard to Applicants' argument that European Patent Application EP 0 811 479 A2 does not disclose the substrate layer having an outer surface bonded to said at least on porous material layer, the Examiner contends that EP 0 811 479 A2 does teach the substrate layer having an outer surface bonded to said at least on porous material layer since EP 0 811 479 A2 explicitly teaches the filter being formed by laminating the substrate layer and the porous material layer together in page 11, lines 41-45.
3. In response to applicant's argument that there is no suggestion to combine the EP 0 811 479 A2 and EP 0 630 755 A2 or JP 9-295406 references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*,

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837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art at the time the invention was made would have recognized that the air-permeable filters of EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" could be incorporated into the ink cartridge of EP 0 630 755 A2 or JP 9-295406 to provide a vent filter for the ink cartridge having good mechanical rigidity to prevent the filters from being damaged in transit to prevent ink from being lost from the cartridge. While EP 0 811 479 A2 is disclosed as having a specific utility as a battery separator membrane, EP 0 811 479 A2 explicitly teaches that similar separators can be used as various types of filters in page 1, lines 7-8. Therefore, since EP 0 630 755 A2 and JP 9-295406 each disclose an ink cartridge having an air vent covered by a laminated air permeable filter, one of ordinary skill in the art at the time the invention was made would have recognized that the high mechanical strength filter of EP 0 811 479 A2 could have been substituted for the lower mechanical strength filters of EP 0 630 755 A2 and JP 9-295406.

4. In response to applicant's argument that European Patent Application are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, EP 0 630 755 A2 and JP 9-295406 each disclose an ink

cartridge having an air vent covered by a laminated air permeable filter. European Patent Application EP 0 811 479 A2 is seen as being analogous art since both Applicants and EP 0 811 479 A2 are concerned with providing an air-permeable, and liquid excluding filter that is capable of being incorporated into an ink cartridge.

5. With regard to Applicants' argument that the amendments presented in the reply filed 29 July 2002 are not presented to distinguish the invention over the prior art or to narrow the claims, the Examiner contends that the additional limitation "... and having an outer surface bonded to said at least one porous material layer" presented in independent claims 1 and 5 narrows the claims by further defining the relationship between the porous material layer and the substrate layer.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 2, 6-13, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 in view of the Internet publication "Tyvek® for Packaging - Products".

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With regard to claims 1, 6, 7, and 17, EP 0 811 479 A2 discloses an air-permeable filter capable of being used in an ink cartridge, the air-permeable filter comprising a laminate comprising a porous material layer comprising polyolefin and an air-permeable substrate layer having an outer surface bonded to said at least one porous material layer in page 2, lines 7-8, page 3, line 29 to page 5, line 41, and page 11, lines 46-54. EP 0 811 479 A2 discloses the substrate layer being formed from TYVEK® having a thickness of 100 μm (4 mills) and a basis weight of 41 g/m^2 (1.2 oz/yd^2) in page 11, lines 46-54.

EP 0 811 479 A2 does not explicitly disclose the TYVEK® material used to form the substrate having a tensile strength of 1 MPa.

The Internet publication "Tyvek® for Packaging - Products" discloses the properties of the different materials commercially available under the trademark TYVEK® in pages 1-2. Comparing the basis weight and thickness of the substrate material disclosed in EP 0 811 479 A2 to the properties given in the table of the Internet publication, it is apparent that the material is either TYVEK® 1422A or 1422R. Since TYVEK® 1422R has the lowest tensile strength, TYVEK® 1422R will be used for calculation purposes. The Examiner notes that the Internet publication reports the tensile strength of the TYVEK® materials in lbs/in. However, since the thickness of the material is also given, the tensile strength in lbs/in.^2 can be calculated by dividing the tensile strength in lbs/in. by the thickness of the material. Again, in order to keep the calculations on the conservative side, the tensile strength in the machine direction will be used as the tensile strength of the material. Substituting the numbers for TYVEK®

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1422R into the formula yields a tensile strength of 7.5 lbs/in./0.0054 in. or 1389 lbs/in² (9.6 MPa). The Examiner notes that substituting the data for TYVEK® 1422A into the above equation yields a tensile strength of 1463 lbs/in² (10.1 MPa). The Examiner further notes that substituting the data for any of the other available TYVEK® variations into the equation will also yield a tensile strength higher than that of TYVEK® 1422R.

Therefore, the TYVEK® material used to form the substrate layer of EP 0 811 479 A2 is seen as inherently having a tensile strength of at least 9.6 MPa.

Since the prior art is seen as disclosing a specific example of the tensile strength lying within the claimed ranges of at least 1 MPa, from 1 MPa to 1500 MPa, and from 3 MPa to 500 MPa, these limitations are anticipated.

With regard to the air-permeable filter being for an ink cartridge, intended use has been continuously held not to be germane to determining the patentability of the apparatus (In re Finsterwalder, 168 USPQ 530). Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim (Ex parte Thibault, 164 USPQ 666). Inclusion of the material worked upon by the by a structure being claimed does not impart patentability to the claims (In re Otto et al., 136 USPQ 458). A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed (Ex parte Masham, 2 USPQ 2d 1647).

In regard to the effective date of the Internet publication, the Examiner notes that the earliest available date on the reference is the copyright date of 2000. Since no

month of publication is provided, it is not clear whether or not the reference antedates the effective filing date of the instant application. However, since the reference is cited only to provide the characteristics and properties of a material, the Examiner notes that the reference is not required to have been available as prior art before Applicants' filing date. See MPEP § 2124.

Furthermore, Applicants cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

In regard to the internet publication "Tyvek® for Packaging - Products", the Examiner notes that due to the formatting of the web page, the four rightmost columns of the table did not print when the reference was printed using an internet web browser. Accordingly, in order to provide Applicants with all of the information contained in the table, the reference is also being provided in an altered format produced using a word processor.

With regard to claim 2, EP 0 811 479 A2 discloses the air-permeability of the air-permeable substrate being 100 sec/100 cc (100 sec / 100 ml) as represented by Gurley number in page 12, line 25 to page 13, line 19.

Since the prior art is seen as disclosing a specific example of the air permeability lying within the claimed range of 300 sec/ 100 ml or less, this limitation is anticipated.

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With regard to claim 8, EP 0 811 479 A2 discloses the air-permeable filter having a Gurley number (air permeability) of 100 sec/100 cc (100 sec / 100 ml in page 6, lines 22-23.

Since the prior art is seen as disclosing a specific example of the Gurley number (air permeability) lying within the claimed range of 0.1 sec/100 ml to 300 sec/ 100 ml, this limitation is anticipated.

With regard to claim 9, EP 0 811 479 A2 discloses the air-permeable filter having a Gurley number (air permeability) of 100 sec/100 cc (100 sec / 100 ml) to 200 sec/100 cc (200 sec/100 ml) in page 6, lines 22-23.

Since the prior art range is seen as overlapping the claimed range for Gurley number (air permeability) of 0.5 sec/100 ml to 100 sec/ 100 ml, a prima facie case of obviousness exists which be overcome through the showing of unexpected or unobvious results.

With regard to claims 10 and 11, EP 0 811 479 A2 discloses the average diameter of the pores in the porous material being 0.03 μm in page 12, line 30 to page 13, line 3.

Since the prior art is seen as disclosing a specific example of the average pore diameter lying within the claimed ranges of 10 μm or less and 0.01 μm to 5 μm , these limitations are anticipated.

With regard to claims 12 and 13, EP 0 811 479 A2 discloses thickness of the porous material being 25 μm in page 12, lines 30-45.

Since the prior art is seen as disclosing a specific example of the thickness lying within the claimed ranges of 2 μm or more and 10 μm to 1000 μm , these limitations are anticipated.

With regard to claim 19, EP 0 811 479 A2 discloses the air-permeable filter having a Gurley number (air permeability) of 100 sec/100 cc (100 sec / 100 ml) to 200 sec/100 cc (200 sec/100 ml) in page 6, lines 22-23.

EP 0 811 479 A2 does not disclose the filter having a Gurley number of less than 100 sec/100 ml.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the Gurley number of the filter to less than 100 sec/100 ml since one of ordinary skill in the art at the time the invention was made would have expected a filter having a Gurley number of slightly less than 100 sec/100 ml to exhibit roughly the same properties as a filter having a Gurley number of 100 sec/100 ml.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" as applied to claim 1 above, and further in view of Scarmoutzos et al. or Shen et al.

EP 0 811 479 A2, and the Internet publication "Tyvek® for Packaging - Products" do not disclose at least one layer of the laminate having been rendered water-repellant and oil-repellant.

Scarmoutzos et al. discloses rendering a porous material layer water-repellant and oil-repellant in col. 3, line 18 to col. 6, line 18.

Shen et al. discloses rendering an air-permeable substrate layer water-repellant and oil-repellant in col. 1, line 14 to col. 6, line 25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the water-repellency and oil-repellency of Scarmoutzos et al. or Shen et al. into the air-permeable layers of the filter of European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" to prevent water and organic solvents from passing through the filter.

9. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 630 755 A2 or Japanese Published Patent Application JP 9-295406 in view of European Patent Application EP 0 811 479 A2 and the Internet publication "Tyvek® for Packaging - Products".

With regard to claim 5, EP 0 630 755 A2 discloses an ink cartridge (55) comprising a space for receiving ink and at least one air vent (55e) in which a laminated air permeable filter (55c) is provided in Figs. 8, 9A, and 9B and col. 19, line 18 to col. 19, line 10.

JP 9-295406 discloses an ink cartridge (104) comprising a space for receiving ink and at least one air vent (not numbered) in which a laminated air permeable filter (100) is provided in Figs. 1-3.

EP 0 630 755 A2 and JP 9-295406 do not disclose the air-permeable filter comprising a laminate comprising a porous material layer comprising fluoro resin or polyolefin and an air-permeable substrate layer having a tensile strength of 1 MPa or more.

The Internet publication "Tyvek® for Packaging - Products" discloses the properties of the different materials commercially available under the trademark TYVEK® in pages 1-2. Comparing the basis weight and thickness of the substrate material disclosed in EP 0 811 479 A2 to the properties given in the table of the Internet publication, it is apparent that the material is either TYVEK® 1422A or 1422R. Since TYVEK® 1422R has the lowest tensile strength, TYVEK® 1422R will be used for calculation purposes. The Examiner notes that the Internet publication reports the tensile strength of the TYVEK® materials in lbs/in. However, since the thickness of the material is also given, the tensile strength in lbs/in.^2 can be calculated by dividing the tensile strength in lbs/in. by the thickness of the material. Again, in order to keep the calculations on the conservative side, the tensile strength in the machine direction will be used as the tensile strength of the material. Substituting the numbers for TYVEK® 1422R into the formula yields a tensile strength of $7.5 \text{ lbs/in.} / 0.0054 \text{ in.}$ or 1389 lbs/in^2 (9.6 MPa). The Examiner notes that substituting the data for TYVEK® 1422A into the above equation yields a tensile strength of 1463 lbs/in^2 (10.1 MPa). The Examiner

further notes that substituting the data for any of the other available TYVEK® variations into the equation will also yield a tensile strength higher than that of TYVEK® 1422R.

Therefore, the TYVEK® material used to form the substrate layer of EP 0 811 479 A2 is seen as inherently having a tensile strength of at least 9.6 MPa.

Since the prior art is seen as disclosing a specific example of the tensile strength lying within the claimed range of at least 1 MPa, this limitation is anticipated.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the air-permeable filters of EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" into the ink cartridges of EP 0 630 755 A2 or JP 9-295406 to provide vent filters for the ink cartridges having good mechanical rigidity to prevent the filters from being damaged in transit to prevent ink from being lost from the cartridge.

With regard to claim 16, EP 0 630 755 A2 discloses the porous material of the air-permeable filter facing an inner space of the ink cartridge in Figs. 8, 9A, and 9B and col. 19, line 18 to col. 19, line 10. JP 9-295406 discloses the porous material of the air-permeable filter facing an inner space of the ink cartridge in Figs. 1-3.

10. Claims 4, 14, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" as applied to claims 1 and 17 above, and

further in view of Scarmoutzos et al. and Japanese Published Patent Application JP 7-171318.

European Patent Application EP 0 811 479 A2 discloses the air permeable substrate comprising a high molecular weight polyethylene in col. 11, lines 49-53.

European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" do not disclose the substrate comprising an ultrahigh molecular weight polyethylene having a molecular weight of 300,000 or more or 500,000 to 10,000,000 or the porous material comprising polytetrafluoroethylene.

Japanese Published Patent Application JP 7-171318 discloses a similar air permeable filter wherein the air-permeable substrate comprises an ultrahigh molecular weight polyethylene having a molecular weight of 4,000,000 in page 1, line 1 to page 2, line 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ultrahigh molecular weight polyethylene of JP 7-171318 into the air permeable filter of EP 0 811 479 A2 and the internet publication to provide an air permeable substrate layer having a high melting point to allow the filter to be used in high temperature environments, as suggested by JP 7-171318 in page 1, lines 25-27.

Scarmoutzos et al. discloses a similar filter wherein the porous material comprises polytetrafluoroethylene in col. 1, line 10 to col. 4, line 10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the porous polytetrafluoroethylene material of

Scarmoutzos et al. for the porous polyethylene material of EP 0 811 479 A2 in that such are alternate materials in the art for forming porous material layers, mere substitution of one known porous layer material for another in the art being within the scope of one having ordinary skill in the art.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 and the Internet publication "Tyvek® for Packaging - Products" as applied to claim 17 above, and further in view of Scarmoutzos et al.

EP 0 811 479 A2, and the Internet publication "Tyvek® for Packaging - Products" do not disclose at the at least one porous material layer being water-repellant and oil-repellant.

Scarmoutzos et al. discloses rendering a porous material layer water-repellant and oil-repellant in col. 3, line 18 to col. 6, line 18.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the water-repellency and oil-repellency of Scarmoutzos et al. into the at least one porous material layer European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" to prevent water and organic solvents from passing through the filter.

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12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 and the Internet publication "Tyvek® for Packaging - Products" as applied to claim 17 above, and further in view of Shen et al.

EP 0 811 479 A2, and the Internet publication "Tyvek® for Packaging - Products" do not disclose the at least one air permeable substrate layer being water-repellant and oil-repellant.

Shen et al. discloses rendering an air-permeable substrate layer water-repellant and oil-repellant in col. 1, line 14 to col. 6, line 25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the water-repellency and oil-repellency of Shen et al. into the air-permeable substrate layer of European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" to prevent water and organic solvents from passing through the filter.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 and the Internet publication "Tyvek® for Packaging - Products" as applied to claim 17 above, and further in view of Miksch.

European Patent Application EP 0 811 479 A2 and the Internet publication "Tyvek® for Packaging - Products" do not disclose the at least one porous material layer comprising two porous material layers, and wherein said at least one air-permeable substrate layer is formed between the two porous material layers.

Miksch discloses a similar filter wherein the at least one porous material layer comprising two porous material layers (37), and wherein said at least one air-permeable substrate layer (11) is formed between the two porous material layers in Fig. 1 and col. 6, line 24 to col. 7, line 47.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the two porous material layers of Miksch into the filter of European Patent Application EP 0 811 479 A2 and the internet publication "Tyvek® for Packaging - Products" to provide a filter having improved filtration efficiency and to provide a symmetrical filter that can be installed in either direction to prevent the users of the filters from inadvertently installing the filter in an improper orientation.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

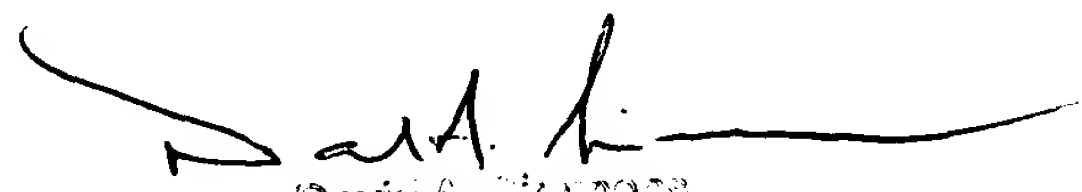
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724



jmg
October 3, 2002



David A. Simmons
Supervisory Patent Examiner
Technology Center 1700